

3/5/81

FILE COPY

Date out: EFB MAR 5 1981

To: Product Manager 25 Taylor
TS-767From: Dr. Willa Garner *W*
Chief, Review Section No. 1
Environmental Fate Branch

Attached please find the environmental fate review of:

Reg./File No.: 464-554

Chemical: *u*
Tricopyr

Type Product: herbicide

Product Name: Garlon

Company Name: Dow

Submission Purpose: protocol for forest eco-system study

ZBB Code: protocol

ACTION CODE: 450

Date in: 2/19/81

EFB # 766

Date Completed: MAR 5 1981

TAIS (level II)

Days

Deferrals To:

108

2

Ecological Effects Branch

Residue Chemistry Branch

Toxicology Branch

1.0 INTRODUCTION

1.1 Purpose

Dow Chemical Company is requesting review of a protocol for forest eco-system study for Trichlopyr, designed to fulfill environmental chemistry data requirements described under title "Field Dissipation", in Section 163.62-10(d) (43 FR 29720). [File No. 464-554, submitted on 2/10/81].

1.2 Background

Triclopyr, Garlon 4 Herbicide, is currently registered for control of woody plants and broadleaf weeds on rights-of-way, industrial sites and non-crop areas, and for use in forest site preparation as well as basal bark treatment in forestry (EPA Reg. No. 464-554, approved on 11/4/80). Registered use pattern allows:

[A] Use to rights-of-way, industrial sites, non-crop areas and forest site preparation as follows:

- (1) High-volume sprays with ground equipment at a maximum dosage of 12 lbs. ai in 100-400 gallons of water per acre;
- (2) Low-volume sprays with ground equipment at a maximum dosage of 8 lbs ai in 20-100 gallons of water per acre;
- (3) Aerial application using a helicopter and a maximum dosage of 8 lbs ai in 10-30 gallons of water/A plus Nalcotrol, an antidrift control agent, at the rate of 1 pt to 2 qt/100 gallons of spray solution. Alternatively, the helicopter must be equipped with a microfoil boom.

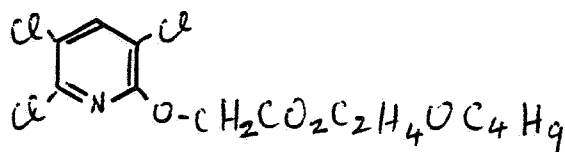
[B] Use to Forests as Follows:

For basal bark treatment, use a maximum dosage of 2 lb ai in enough diesel oil, No. 1 or No. 2 fuel oil or kerosene to make 100 gallons of spray mixture. Apply with knap sack sprayer or power spraying equipment.

1.3 Chemical

Common name : Triclopyr
 Trade name : Garlon 4
 Chemical formula : 3,5,6-Trichloro-2-pyridinyloxyacetic acid,
 butoxy ethyl ester - 61.6% (4 Lbs ai/gal.)
 (ac = 44.3%).

Structural formula:



1.4 Previous Reviews

464-LUA 7/6/78
 464-LLU 5/13/80

2.0 PROPOSED PROTOCOL

The purpose of the experimental design submitted by Dow Chemical Company is to generate field dissipation data requirements according to Section 163.62-10(d) of the guidelines; in support of the current registration status of Garlon.

The company is proposing use of Garlon at the rate of 3 lbs ai/A in 10-15 gallons per acre using aerial equipment (helicopter). Applications are scheduled to begin July 1 and terminate July 15, 1981. The test program will be limited to Kosciusko County, Mississippi (see attached map); under the responsibility of B.C. Byrd and R.D. Fears of Dow Chemicals.

Description of samples and collection interval following application are shown in pages 4 and 5 (copied from Dow's protocol).

3.0 REGISTERED USE PATTERN FOR TRICLOPYR

We noted that the registered use to forests is minor relative to other registered uses to rights-of-way, industrial sites, non-crop areas, and forest site preparation (EPA Reg. No. 464-554, approved on 11/4/80).

Registered use to forests is for basal bark treatment at a maximum dosage of 2 pounds of the active ingredients in enough diesel oil No. 1 or No. 2 fuel oil or kerosene to make 100 gallons of spray mixture. Use is currently registered by the use of a knap sack sprayer or power spraying equipment.

Registered uses to all other sites allow a maximum dosage of 12 pounds of the active ingredients in a maximum spray volume of 400 gallons of water per acre using ground equipment. Aerial application is also permitted (helicopter) for these sites (not forests), however, *at lower dosage* and spray volume not considered to be worst case situation for generating data for the purpose of hazard assessment.

4.0 RECOMMENDATION

We do not concur with the proposed protocol. Use pattern (dosage, spray volume, diluent, surfactants, use method, and use site) must be consistent with those currently approved on the Garlon Label, Reg. No. 464-554, approved on 11/4/80 (See 3.0 above).

Sami Malak

Sami Malak, Ph.D.

Review Section #1

Environmental Fate Branch

Hazard Evaluation Division

FOREST ECO-SYSTEM STUDY - Description of Samples and Collection Interval Following Application

Sample Description	Time from Last Application to Sample Collection:									
	Pretreatment	0 Day	1 Day	3 Days	1 wk	4 wks	8 wks	16 wks	32 wks	52 wks
1. Uncovered soil ^{a/}	x	x	x	x	x	x	x	x	x	x
2. Litter covered soil ^{a/}	x	x	x	x	x	x	x	x	x	x
3. Litter	x	x	x	x	x	x	x	x	x	x
4. Foliage, overstory	x	x	x	x	x	x	-	-	-	-
5. Standing water ^{a/}	x	x	x	x	x	x	-	-	-	-
6. Running water ^{a/}	x	x	x	x	x	x	-	-	-	-
7. Sediment	x	-	-	-	-	x	-	-	-	-
8. Fish	x	-	-	-	-	x	-	-	-	-
9. Crayfish	x	-	-	-	-	x	-	-	-	-
10. Aquatic plants	x	x	x	-	x	x	-	-	-	-
11. Foliage	x	x	x	x	x	x	-	-	-	-

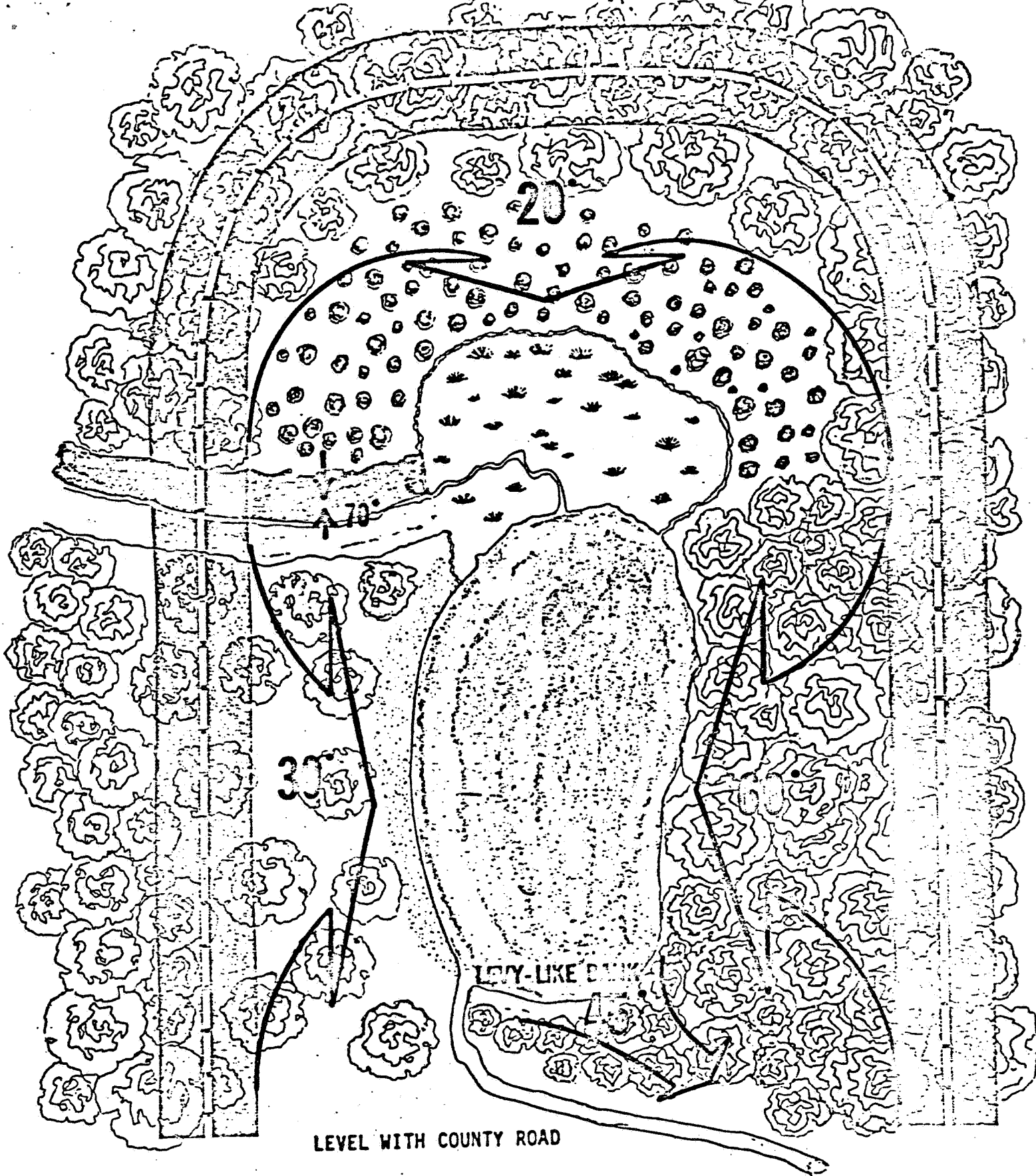
1. Uncovered soil - 3 samples of 6 to 8 random cores each taken from each depth, 0-6" and 6-12". Take samples from open area approximately 500 sq. ft. in size.
2. Litter covered soil - 3 samples of 6 to 8 random cores each taken from each depth, 0-6" and 6-12". After application remove litter from soil sampling sites. Sample an open area approximately 500 sq. ft. in size.
3. Litter - 3 samples of 1/2 to 1 lb. each taken from the soil sampling sites in item 2 above.
4. Foliage, overstory - 3 samples of 1/2 to 1 lb. of leaves taken from the top, middle and bottom around the circumference of each tree.
5. Standing water - 3 samples of 1 qt. each taken from 3 randomly selected sites around the pond.
6. Running water - 3 samples of 1 qt. each from each sampling site. Sample in treated area immediately after application and two predetermined sites downstream at various time intervals after application depending on swiftness of stream.

^{a/}In addition to the sampling times listed, sample immediately after first rain after application and again within two weeks following the first rainfall. A rain being defined as sufficient rainfall to result in run-off.

FOREST ECO-SYSTEM STUDY

7. Sediment - 1 qt. per sample - Taken from bottom at same locations as water samples from running and standing water sampling sites.
8. Fish - One composite sample containing 12 fish. One sample for each - top, middle and bottom feeders. Top feeders: Sunfish, trout, or bass. Middle feeders: Sunfish, trout, or bass. Bottom feeders: catfish, carp or suckers. Minimum size for fish - sunfish 5 to 8 inches, trout, bass, carp, catfish and suckers 10 to 12 inches.
9. Crayfish - One composite sample with 12 crayfish of uniform size.
10. Aquatic plants - 3 samples 1/2 to 1 lb. per sample of: (a) Underwater species and (b) At or above water level species.
11. Foliage - 3 samples of 1/2 to 1 lb. per sample of grass, forbs or shrubs collected at random from open area.

HORSESHOE SPRAY P. TERN AROUND LAKE ABOVE, BU. NEAR RIDGE



SPRAY AREA FLAT TO SLIGHTLY ROLLING